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PARVINI, PEGAH	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/592,017	KUEBELBECK, ARMIN	
	Examiner	Art Unit	
	PEGAH PARVINI	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20060907*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 1-16 and 18 are objected to because of the following informalities: It is suggested to change the British spelling of the following term to American spelling by changing "s" to "z" where it is applicable in the following two terms throughout said claims: "characterised" and "solubilisers". Appropriate correction is required.

Claim 17 is objected to because of the following informalities: said claim recites "Powder consisting of spherical SiO_2 particles obtainable by one of the processes according to Claim 1". Please note although said claim recites "one of the processes", claim 17 depends upon only claim 1. Appropriate correction is required.

For the purpose of examination, it is interpreted that claim 17 depends on claim 1 only.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 6 recites the broad recitation of from 0.1 to 5% by weight for the proportion of amine in the medium, and the claim also recites preferably from 0.5 to 2% by weight which is the narrower statement of the range/limitation.

Claims 12-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites "A^1 denotes an alkyl chain" whereas, based on further information provided in said claim, A^1 should be able to bond to B_m, or C_n if B_m does not exist, or to A^2 if neither B_m nor C_n exists; therefore, A^1 cannot be an alkyl group.

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 provides for the use of powders consisting of SiO_2 particles produced according to claim 1 in a few different ways, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 19 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,302,926 to Anselmann et al.

Regarding claims 1 and 2, Anselmann et al. teach that a process through which the sol or suspension of primary particles of silica is first formed by hydrolytic polycondensation of tetraalkoxysilanes in an aqueous-alcoholic ammoniacal medium and is then subsequently brought to the desired final size by metered addition of further tetraalkoxysilane (column 1, lines 1-15; column 3, lines 3-8). Furthermore, the reference discloses the formation of monodisperse spherical oxide particles of SiO_2 (column 1, lines 62-67; column 2, lines 17-18 and 34-37).

Claims 1-2, 7-9, and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 4,775,520 to Unger et al.

Regarding claims 1 and 2, Unger et al. teach a process through which monodispersed spherical SiO_2 particles are prepared by, first a sol or primary particles which is prepared by hydrolytic polycondensation of tetraalkoxysilanes in n aqueous/alcoholic ammoniacal medium. Then, the SiO_2 particles are converted to the desired particle size by a continuous measured addition of tetraalkoxysilane or

organotrialkoxysilane controlled by the extent of the reaction (Abstract; column 3, lines 5-16; column 4, lines 3-7 and 29-40).

Regarding claim 7, Unger et al. disclose the use of alcohol such as methanol, ethanol and others, water and ammonia in the process (column 3, lines 46-51; column 4, lines 3-6).

Regarding claim 8, Unger et al. teach that suitable tetraalkoxysilanes are esters of aliphatic alcohols containing 1-5 C atoms such as, for example, methanol, ethanol, n- or i-propanol; additionally, Unger et al. discloses that the especially preferred one is tetraethoxysilane (column 3, lines 30-44).

Regarding claim 9, Unger et al. teach maintaining the temperature between about 35ºC to 75ºC (column 4, lines 19-20).

Regarding claims 17 and 18, Unger et al. disclose obtaining SiO_2 particles with mean particle diameter of 0.05 and 10 microns (column 2, lines 41-43).

However, with reference to said claims, it is noted that process limitations in product claims do not add patentable weight to the examination of the claim. Regarding said claims, MPEP 2113 states:

> "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product

of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claims 1 and 10-18 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application Publication No. 2003/0124564 to Trau et al.

Regarding claims 1 and 10-16, Trau et al. disclose the Stober process through which monodispersed silica particles are formed in a hydrolysis of tetraethyl orthosilicate (TEOS) in a solution of ethanol, water, and ammonia having a maximum particle size of approximately 3 microns ([0010]-[0012]). Moreover, the reference discloses that Stober process allows the incorporation of fluorescent dyes into the silica network ([0012]; Figure 3). As noted on Figure 3, R^1, R^2, and R^3 are identical and are methoxy groups (i.e. alkoxy groups) thus, the limitation of claim 16 is met. Furthermore, it is noted that m and n may be zero; nevertheless, when m=1, B is the aminothiocarbonyl group or the segment of the structure of Fig. 3 where the carbon atom is bonded to two nitrogen through two single bonds and to a sulfur atom through a double bond. Additionally, A^1 is the two carbon chain connecting the Si to N of the aminothiocarbonyl group. In addition, the part of the structure of Fig. 3 which corresponds to the three aromatic bound connected to one aromatic bond having a carboxylic acid group can be considered as A^2. Finally, n may be zero as defined in claim 12.

With reference to claims 17 and 18, Trau et al. disclose obtaining SiO_2 particles with a maximum particle diameter of 3 microns via Stober process, which as explained in detail above, meets the limitation of instant claim 1.

However, with reference to said claims, it is noted that process limitations in product claims do not add patentable weight to the examination of the claim. Regarding said claims, MPEP 2113 states:

> "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anselmann et al. as applied to claim 1 above, and further in view of US Patent Application Publication No. 2003/0124564 to Trau et al.

Regarding claims 10-16, Anselmann et al., as detailed above, teach that a process through which the sol or suspension of primary particles of silica is first formed by hydrolytic polycondensation of tetraalkoxysilanes in an aqueous-alcoholic ammoniacal medium and is then subsequently brought to the desired final size by metered addition of further tetraalkoxysilane. Furthermore, the reference discloses the formation of monodisperse spherical oxide particles of SiO_2.

Trau et al. disclose the Stober process through which monodispersed silica particles are formed in a hydrolysis of tetraethyl orthosilicate (TEOS) in a solution of ethanol, water, and ammonia having a maximum particle size of approximately 3 microns ([0010]-[0012]). Moreover, the reference discloses that Stober process allows the incorporation of fluorescent dyes into the silica network ([0012]; Figure 3). As noted on Figure 3, R^1, R^2, and R^3 are identical and are methoxy groups (i.e. alkoxy groups) thus, the limitation of claim 16 is met. Furthermore, it is noted that m and n may be zero; nevertheless, when m=1, B is the aminothiocarbonyl group or the segment of the structure of Fig. 3 where the carbon atom is bonded to two nitrogen through two single bonds and to a sulfur atom through a double bond. Additionally, A^1 is the two carbon chain connecting the Si to N of the aminothiocarbonyl group. In addition, the part of the structure of Fig. 3 which corresponds to the three aromatic bound connected to one aromatic bond having a carboxylic acid group can be considered as A^2. Finally, n may be zero as defined in claim 12.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Anselmann et al. in order to include the incorporation of a fluorescent dye as that taught by Stober process in Trau et al. motivated by the fact that Stober process is on the preparation of monodispersed silica particles produced by the same method as that taught by Anselmann et al.

Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unger et al. as applied to claim 1 above, and further in view of US Patent Application Publication No. 2003/0124564 to Trau et al.

Regarding claims 10-16, Unger et al. as detailed above, disclose a method for the preparation of spherical SiO_2 particles by hydrolytic polycondensation of tetraalkoxysilanes in an aqueous/alcoholic ammoniacal medium, in which method a sol of primary particles is first produced and the SiO_2 particles obtained are then converted to the desired size by a continuous measured addition of tetraalkoxysilane controlled by the extent of the reaction. The particles obtained are highly monodispersed, and a preferred tetraalkoxysilane is tetraethoxysilane.

Unger et al., however, do not disclose the addition of a dye, more specifically a fluorescent dye which would meet the limitation of claims 12-16.

Trau et al. disclose the Stober process through which monodispersed silica particles are formed in a hydrolysis of tetraethyl orthosilicate (TEOS) in a solution of

ethanol, water, and ammonia having a maximum particle size of approximately 3 microns ([0010]-[0012]). Moreover, the reference discloses that Stober process allows the incorporation of fluorescent dyes into the silica network ([0012]; Figure 3). As noted on Figure 3, R^1, R^2, and R^3 are identical and are methoxy groups (i.e. alkoxy groups) thus, the limitation of claim 16 is met. Furthermore, it is noted that m and n may be zero; nevertheless, when m=1, B is the aminothiocarbonyl group or the segment of the structure of Fig. 3 where the carbon atom is bonded to two nitrogen through two single bonds and to a sulfur atom through a double bond. Additionally, A^1 is the two carbon chain connecting the Si to N of the aminothiocarbonyl group. In addition, the part of the structure of Fig. 3 which corresponds to the three aromatic bound connected to one aromatic bond having a carboxylic acid group can be considered as A^2. Finally, n may be zero as defined in claim 12.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Unger et al. in order to include the incorporation of a fluorescent dye as that taught by Stöber process in Trau et al. motivated by the fact that Stöber process is on the preparation of monodispersed silica particles produced by the same method as disclosed by Unger et al. which would result in particles having overlapping ranges with the ones disclosed by Unger et al.

Claims 3-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anselmann et al. as applied to claim 1 above, and further in view of US Patent No. 3,922,392 to Kohlschütter et al. as evidenced by US Patent No. 5,932,168 to Su.

Regarding claims 3-4 and 6, Anselmann et al., as detailed above, teach that a process through which the sol or suspension of primary particles of silica is first formed by hydrolytic polycondensation of tetraalkoxysilanes in an aqueous-alcoholic ammoniacal medium and is then subsequently brought to the desired final size by metered addition of further tetraalkoxysilane. Furthermore, the reference discloses the formation of monodisperse spherical oxide particles of SiO_2.

Anselmann et al., although disclosing the use of a base, ammonia, do not expressly disclose the use of an amine such as primary or alkylamine.

Kohlschütter et al., drawn to materials coated with silicon dioxide, disclose that during the hydrolysis and condensation processes which leads to the production of silica, bases such as ammonium hydroxide, primary, secondary and tertiary amines, for example, methyldimethylamine or trimethylamine are used in the solution along with excess water and alcohol (column 3, lines 48-67; column 4, lines 1-50). Furthermore, Kohlschütter et al. teach that bases produce hydroxyl ions and that the amount of hydroxyl ion (i.e. the amount of the base) would impact average pore diameter and specific pore volume of the silica (column 3, lines 65-67).

It is further known that ammonia in contact with water would form ammonium hydroxide.

Therefore, it would have been obvious to one of ordinary skill in the art to modify Anselmann et al. in order to include the use of a base, such as trimethylamine, (a base other than ammonia) in the medium as that taught by Kohlschütter et al. motivated by the fact that changing the concentration of hydroxyl ion (i.e. the base) would change the pore diameter and volume, and further motivated by the fact that both ammonia and amines such as trimethylamine are bases producing hydroxyl ion in aqueous solution and are, thus, functionally equivalent as evidenced by Su reference which discloses that bases such as ammonium hydroxide (i.e. the ammonia in an aqueous environment) or dimethylamine as well as others such as N-(2-hydroxyethyl)ethylenediamine act as catalyst for the hydrolysis of an alkoxy silane compound (Su; Column 5, lines 52-67). Additionally, it would have been obvious to utilize an amount of amine which would have overlapping ranges with the ranges of amount instantly claimed in claim 6 motivated by the fact that Kohlschütter et al. disclose the use of solution having hydroxyl ion concentration of $1x10^{-3}$ to 1.5 moles per mole of SiO^2 and that the amount of hydroxyl ion used affects the pore diameter and pore volume.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anselmann et al. as applied to claim 1 above, and further in view of US Patent Application Publication No. 2003/0087102 to Yamaya et al.

Regarding claims 3-5, Anselmann et al., as detailed above, teach that a process through which the sol or suspension of primary particles of silica is first formed by

hydrolytic polycondensation of tetraalkoxysilanes in an aqueous-alcoholic ammoniacal medium and is then subsequently brought to the desired final size by metered addition of further tetraalkoxysilane. Furthermore, the reference discloses the formation of monodisperse spherical oxide particles of SiO_2.

Anselmann et al., although disclosing the use of a base, ammonia, do not expressly disclose the use of an amine such as an amine compound such as octylamine.

However, it would have been obvious to modify Anselmann et al. in order to include a base such as octylamine as that taught by Yamaya et al., drawn to hydrolyzing organosilicon compound of the general formula $R'_pSiR''_qX_{4-p-q}$ such as trialkoxysilane, wherein bases such as ammonia or octylamine are used motivated by the fact that these bases act as condensation reaction promoters (catalysts); thus, they impart same effect and function toward the same reason in the wherein an organosilicon compound is hydrolyzed (Yamaya et al. [0035], [0042], [0045]).

Claims 3-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unger et al. as applied to claim 1 above, and further in view of US Patent No. 3,922,392 to Kohlschütter et al. as evidenced by US Patent No. 5,932,168 to Su.

Regarding claims 3-4 and 6, Unger et al. as detailed above, disclose a method for the preparation of spherical SiO_2 particles by hydrolytic polycondensation of

tetraalkoxysilanes in an aqueous/alcoholic ammoniacal medium, in which method a sol of primary particles is first produced and the SiO_2 particles obtained are then converted to the desired size by a continuous measured addition of tetraalkoxysilane controlled by the extent of the reaction. The particles obtained are highly monodispersed, and a preferred tetraalkoxysilane is tetraethoxysilane.

Unger et al., although disclosing the use of a base, ammonia, do not expressly disclose the use of an amine such as primary or alkylamine.

Kohlschütter et al., drawn to materials coated with silicon dioxide, disclose that during the hydrolysis and condensation processes which leads to the production of silica, bases such as ammonium hydroxide, primary, secondary and tertiary amines, for example, methyldimethylamine or trimethylamine are used in the solution along with excess water and alcohol (column 3, lines 48-67; column 4, lines 1-50). Furthermore, Kohlschütter et al. teach that bases produce hydroxyl ions and that the amount of hydroxyl ion (i.e. the amount of the base) would impact average pore diameter and specific pore volume of the silica (column 3, lines 65-67).

It is, further, known that ammonia in contact with water would form ammonium hydroxide.

Therefore, it would have been obvious to one of ordinary skill in the art to modify Unger et al. in order to include the use of a base, such as trimethylamine, (a base other than ammonia) in the medium as that taught by Kohlschütter et al. motivated by the fact that changing the concentration of hydroxyl ion (i.e. the base) would change the pore diameter and volume, and further motivated by the fact that both ammonia and amines

such as trimethylamine are bases producing hydroxyl ion in aqueous solution and are, thus, functionally equivalent as evidenced by Su reference which discloses that bases such as ammonium hydroxide (i.e. the ammonia in an aqueous environment) or dimethylamine as well as others such as N-(2-hydroxyethyl)ethylenediamine act as catalyst for the hydrolysis of an alkoxy silane compound (Su; Column 5, lines 52-67). Additionally, it would have been obvious to utilize an amount of amine which would have overlapping ranges with the ranges of amount instantly claimed in claim 6 motivated by the fact that Kohlschütter et al. disclose the use of solution having hydroxyl ion concentration of $1x10^{-3}$ to 1.5 moles per mole of SiO^2 and that the amount of hydroxyl ion used affects the pore diameter and pore volume.

It should be noted that the increase in hydroxyl ion concentration would cause an increase in pore diameter and pore volume as that taught by Kohlschütter et al.; thus, this suggests that a decrease in hydroxyl ion concentration (within a range of $1x10^{-3}$ to 1.5 moles of base per mole of SiO_2) would decrease the pore diameter.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unger et al. as applied to claim 1 above, and further in view of US Patent Application Publication No. 2003/0087102 to Yamaya et al.

Regarding claims 3-5, Unger et al. as detailed above, disclose a method for the preparation of spherical SiO_2 particles by hydrolytic polycondensation of

tetraalkoxysilanes in an aqueous/alcoholic ammoniacal medium, in which method a sol of primary particles is first produced and the SiO_2 particles obtained are then converted to the desired size by a continuous measured addition of tetraalkoxysilane controlled by the extent of the reaction. The particles obtained are highly monodispersed, and a preferred tetraalkoxysilane is tetraethoxysilane.

Unger et al., although disclosing the use of a base, ammonia, do not expressly disclose the use of an amine such as octylamine.

However, it would have been obvious to modify Unger et al. in order to include a base such as octylamine as that taught by Yamaya et al., drawn to hydrolyzing organosilicon compound of the general formula $R'_pSiR''_qX_{4-p-q}$ such as trialkoxysilane, wherein bases such as ammonia or octylamine are used motivated by the fact that these bases act as condensation reaction promoters (catalysts); thus, they impart same effect and function toward the same reason in the wherein an organosilicon compound is hydrolyzed (Yamaya et al. [0035], [0042], [0045]).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGAH PARVINI whose telephone number is (571)272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. P./
Examiner, Art Unit 1793

/Michael A Marcheschi/
Primary Examiner, Art Unit 1793